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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,893	03/26/2004	Thomas Kolze	1875.4070002	7800

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EXAMINER	
FAROUL, FARAH	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/809,893	KOLZE ET AL.	
	Examiner	Art Unit	
	FARAH FAROUL	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/06/2008, 05/06/2008 and 07/10/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 5, 2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-70 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-70 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of copending Application No. 10/809685. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following rationales:

Claim 1 of the instant application is a representative claim and it calls for:

A method for maintaining synchronization in a communication system wherein a central entity transmits a signal containing timing information to one or more remote devices, the one or more remote devices using the timing information for scheduling transmissions, the method comprising:

receiving a first signal from the central entity and generating a symbol clock based on timing information included in the first signal;

upon a loss of reception of the first signal, maintaining the symbol clock;

receiving a second signal from the central entity; and

determining a symbol clock offset between the first signal and the second signal using the maintained symbol clock; and

adjusting the maintained symbol clock based on the symbol clock offset to generate an adjusted symbol clock.

Claim 1 of the copending application is a representative claim and it calls for:

A method for maintaining synchronization in a communication system wherein a central entity transmits a signal containing timing information to one or more remote

devices, the one or more remote devices using the timing information for scheduling transmissions, the method comprising:

synchronizing a first symbol clock and a second symbol clock in the central entity;

transmitting a first signal using a first transmitter in the central entity to the one or more remote devices, wherein the first signal includes timing information based on the first symbol clock; and

upon termination of transmission of the first signal to the one or more remote devices, transmitting a second signal using a second transmitter in the central entity to the one or more remote devices, wherein the second signal includes timing information based on the second symbol clock

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The differences between the limitations of the copending applications shown in the bolded words would be apparent to one skilled in the art. The added step of **determining a symbol clock offset between the first signal and the second signal using the maintained symbol clock** just narrows the scope of the instant applicant by explicitly recite how the two signals are synchronized. It has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In Re Karlson,* 136 USPQ 184 (CCPA). Also note *Ex Parte Rainu,* 168 USPQ 375 (Bd. App. 1969); omission of a reference element whose function is not needed would be obvious to one skilled in the art.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3, 16-18, 25, 39, 41-42, 45, 54-56, 63 are rejected under 35 U.S.C. 102(e) as being anticipated by Marchok et al. (US 6,771,590 B1).

For claims 1-2, 16-17, 55 and 63, Marchok discloses receiving a first signal from the central entity (Fig 1, element 25) and generating a symbol clock based on timing information included in the first signal (column 2, lines 37-43 and column 3, lines 17-20);

Upon a loss of reception of the first signal, maintaining the symbol clock, and receiving a second signal from the central entity and determining a symbol clock offset between the first signal and the second signal using the maintained symbol clock (column 2, lines 37-43 and column 3, lines 20-24); and

Adjusting the maintained symbol clock based on the symbol clock offset to provide an adjusted symbol clock and providing the adjusted symbol clock to a transmitter (column 2, lines 44-49 and column 3, lines 24-28).

For claims 3, 18, 45 and 56, Marchok discloses detecting a loss of the first signal prior to receiving the second signal wherein determining the symbol clock offset using the maintained symbol clock comprises incrementing a counter based on the maintained symbol clock during the time period between the loss of the first signal and receipt of the second signal (column 3, lines 18-28).

For claims 25 and 54, Marchok discloses a cable modem (Fig 1, element 30)

For claim 39, Marchok discloses a central entity (Fig 1, element 25) comprising a first transmitter to transmit a first transmitter signal wherein the first transmitter signal contains timing information based on a first central symbol clock (column 2, lines 37-43 and column 3, lines 17-20); and

A remote device (Fig 1, element 30) comprising a receiver to receive a first received signal wherein the first received signal is the first transmitter signal as received from the central entity (column 5, lines 25-30)

A clock generation element to generate a remote symbol clock based on the first received and maintain the remote symbol clock upon a loss of reception of the first received signal (column 2, lines 37-43 and column 3, lines 20-24); and

An offset determination element to determine a remote symbol clock offset between the first received signal and a second received signal using the maintained remote symbol clock (column 2, lines 44-49 and column 3, lines 24-28).

For claims 41 and 42, Marchok discloses an upstream timing element to adjust the maintained remote symbol clock based on the remote symbol clock offset to generate an adjusted remote symbol clock and remote device transmitter to receive the adjusted remote symbol clock (column 14, lines 18-20 and lines 33-40).

For claims 33, 36, 40 and 64, Marchok discloses the second signal is the first signal from the central entity re-acquired after loss of reception (column 3, lines 18-28).

For claims 34, 37, 46, and 65, Marchok discloses incrementing a counter based on the maintained symbol clock during the time period between the loss of the first signal and receipt of the second signal (column 5, lines 57-64).

For claim 43-44 and 67, Marchok discloses a second transmitter to transmit a second transmitter signal wherein the second transmitter signal contains timing information based on a second central symbol clock (column 2, lines 37-43 and column 3, lines 20-24) and a synchronization element to synchronize the first central symbol clock and the second central symbol clock (column 6, lines 8-15).

For claims 68, Marchok discloses the second received signal is the second transmitted signal as received from the central entity(column 3, lines 18-28).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 35, 38, 47, 66 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchok et al. (6,771,590 B1) in view of Quigley (2001/0055319 A1).

For claims 35, 38, 47 and 66, Marchok discloses the entire claimed invention except for identifying a symbol clock offset value that obtains a valid packet alignment for the MPEG data in the second signal

For claims 35, 38, 47 and 66, Quigley discloses identifying a symbol clock offset value that obtains a valid packet alignment for the MPEG data in the second signal (paragraph 144).

Thus, it would have been obvious to one skilled in the art to combine the synchronization method of Quigley with the communication network of Marchok to synchronize the two clock signals.

For claim 70, Quigley discloses transmitting calibration information relating to a difference in FEC alignment between the first and second transmitted signals (paragraphs 146 and 352)

6. Claims 4-6, 9-10, 19-21, 24, 26, 32, 48-50, 53, 57-59, 62, and 69-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchok et al. (US 6,771,590 B1) in view of Rakib (US 6,356,555 B1) (reference disclosed by applicant).

For claims 4, 19, 48 and 57, Marchok discloses the entire claimed invention except for determining the symbol clock offset using the maintained symbol clock comprises identifying a symbol clock offset necessary to obtain a valid alignment for forward error correction (FEC) decoding of the data in the second signal

Rakib, from the same or similar field of endeavor, teaches storing time information (column 46, lines 55-65), determining a clock offset for valid alignment for FEC (column 21, lines 44-54 and column 49, lines 17-24) and decoding transmitted data (see decoder 284 in Fig 11).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the alignment method of Rakib with the communication network of Marchok at the time of the invention. The alignment method of Rakib is implemented into the communication network of Marchok by determining a valid alignment for decoding the

data. The motivation to combine the alignment method of Rakib with the communication network of Marchok is that it provides an efficient synchronization mechanism.

For claims 5, 20, 49 and 58, Marchok discloses the entire claimed invention except for determining the symbol clock offset using the maintained symbol clock comprises identifying a symbol clock offset necessary to obtain a valid puncture alignment for Trellis Code Modulation (TCM) decoding of the data in the second signal

Rakib, from the same or similar field of endeavor, teaches storing time information (column 46, lines 55-65), determining a clock offset for valid alignment for TCM (column 21, lines 44-54 and column 49, lines 24-34) and decoding transmitted data (see decoder 284 in Fig 11).

For claims 6, 21, 50 and 59, Marchok discloses the entire claimed invention except for determining the symbol clock offset using the maintained symbol clock comprises identifying a symbol clock offset necessary to obtain a valid frame alignment for Reed-Solomon decoding of the data in the second signal

Rakib, from the same or similar field of endeavor, teaches storing time information (column 46, lines 55-65), determining a clock offset for valid alignment for Reed-Solomon (column 21, lines 44-54 and column 49, lines 24-34) and decoding transmitted data (see decoder 284 in Fig 11).

For claims 9, 24, 53, 62 and 69, Rakib discloses receiving a notification message from the central entity indicating that the first signal will be terminated and wherein determining the symbol clock offset is performed responsive to receiving the notification

message and receiving the second signal (column 37, lines 39-57 wherein a notification message is sent from the transmitter prior to determining the clock offset)

For claims 10 and 26, Marchok discloses the entire claimed invention except for storing information associated with the timing information to provide delayed timing information and

For claim 10, Marchok discloses upon termination of reception of the signal, accessing the delayed timing information to maintain the symbol clock (column 2, lines 37-43 and column 3, lines 20-24).

Rakib, from the same or similar field of endeavor, teaches storing time information (column 46, lines 55-65) and accessing timing delay information to maintain the clock symbol (column 21, lines 44-55).

For claim 32, Marchok discloses a cable modem (Fig 1, element 30)

7. Claims 11-15 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchok et al. (US 6,771,590 B1) in view of Rakib (US 6,356,555 B1) as applied to claims 10 and 26 above, and further in view of Grimwood et al. (US 6,243,369 B1).

For claims 11 and 27, Marchok and Rakib disclose the entire claimed invention except for storing the information associated with the timing information includes storing the information for a predetermined period of time

Grimwood, from the same or similar field of endeavor, teaches buffering timing information for a period of time (column 42, lines 3-5).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the buffering method of Grimwood with the modified system of Marchok and Rakib at the time of the invention. The buffering method of Grimwood is implemented into the modified system of Marchok and Rakib by storing the timing information for a period of time. The motivation to combine the buffering method of Grimwood into the modified system of Marchok and Rakib is that it provides an efficient synchronization mechanism.

For claims 12 and 28, Marchok and Rakib disclose the entire claimed invention except for accessing the delayed timing information includes accessing the delayed timing information representative of a time period immediately before the termination of the reception of the signal

Grimwood, from the same or similar field of endeavor, teaches accessing the delayed timing information representative of a time period (column 51, lines 8-25).

For claims 13 and 29, Marchok and Rakib disclose the entire claimed invention except for accessing the delayed timing information includes accessing the delayed timing information representative of a time period ending at least one clock cycle before the termination of the reception of the signal

Grimwood, from the same or similar field of endeavor, teaches accessing the delayed timing information representative of a time period ending with at least one clock cycle (column 49, lines 33-40 and column 50, lines 13-21).

For claims 14 and 30, Marchok and Rakib disclose the entire claimed invention except for storing information associated with the timing information includes storing the

information received from at least one of a loop filter, a numerically controlled oscillator, and a voltage controlled oscillator

Grimwood, from the same or similar field of endeavor, teaches storing information received from a loop filter (column 50, lines 59-67)

For claims 15 and 31, Marchok and Rakib disclose the entire claimed invention except for analyzing the information associated with the timing information to determine when the termination of the reception of the signal occurs

Grimwood, from same or similar field of endeavor, teaches analyzing the timing information of the transmitted frames (column 51, lines 26-31).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARAH FAROUL whose telephone number is (571)270-1421. The examiner can normally be reached on Monday - Friday 8:00 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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